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Steam reforming; Process integration; MCFC (Heidebrecht, P. (145) 40)

Maxwell-Stefan

Direct methanol fuel cell; Model; Multi-component mass transport; Flory-Huggins (Schultz, T. (145) 435)

MCFC

Current-interrupted method; Current-pulse method; Transient response; Degradation factor (Sugiura, K. (145) 515)

MCFC

Experimental tests; Biogas; Performance comparison (Bove, R. (145) 588)

MCFC

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MCFC

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Measurement parameter

Fuel cell; Measurement algorithm; Energy model (Purmann, M. (145) 399)

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Metal-supported IT-SOFC

CGO; Modelling; System efficiency; Electronic leakage current (Leah, R.T. (145) 336)

Methanation

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Methane electro-oxidation

LSFCO; Perovskite; CGO; Intermediate temperature; Solid oxide fuel cells (Sin, A. (145) 68)

Methane reforming

Separation hydrogen from methane; Proton conducting ceramics; Hydrogen-permeable metal membrane (Yamaguchi, S. (145) 712)

Methanol barriers

Direct methanol fuel cell; Methanol crossover; Polymer electrolyte membrane; Gas chromatography (Schaffer, T. (145) 188)

Methanol combustor

Polymer electrolyte membrane fuel cells; Portable fuel cells; Hydrogen production; Fuel processor; Methanol reformer (Park, G.-G. (145) 702)

Methanol crossover

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Methanol crossover

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Methanol

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Methanol

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Nanocomposite oxide-based catalyst; Tungsten oxide; Cerium oxide; Yttria-stabilized zirconia (Natile, M.M. (145) 644)

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Microbial fuel cell

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LIGA; Electroforming; PEM fuel cell; Flow field pattern (Lee, S.-J. (145) 369)

Microreactor

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Anode-support; SOFC-stack; Extrusion (Sammes, N.M. (145) 428) Mine gas

Micro gas chromatography; Solid oxide fuel cell; Combined heat and power generation (Au, S.F. (145) 582)

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PEMFC; Gas diffusion electrode; Heat transfer; Mass transfer; Fuel cell (Ramousse, J. (145) 416)

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Transport phenomena; Polymeric fuel cells; Gas flow mode (Serrafero, A. (145) 470)

Morphology control

SOFC; La(Sr)Fe(Co)O_{3-a}; Cathode (Murata, K. (145) 257)

Multi-component mass transport

Direct methanol fuel cell; Model; Maxwell-Stefan; Flory-Huggins (Schultz, T. (145) 435)

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Nanometric powders

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Ni/MgO-TiO₂

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ZSM-5-supported Ni-Ce catalyst; Bimetallic Ni-Re catalyst; Alloying of Ni with Re; Oxidative steam reforming of gasoline (Wang, L. (145) 707)

Open ratio

Free convection; Air-breathing; PEMFC; Channel width (Ying, W. (145) 572)

Oxidation

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Oxidative steam reforming of gasoline

ZSM-5-supported Ni-Ce catalyst; Bimetallic Ni-Re catalyst; Alloying of Ni with Re; On-board hydrogen production (Wang, L. (145) 707) Oxygen electroreduction

Cobalt precursors; Carbon black; TGA; HRTEM; XRD (Manzoli, M. (145) 161)

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PEFC; Water management; Cathode gas channel; Visualization technique (Sugiura, K. (145) 526)

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LIGA; Electroforming; Micro-features; Flow field pattern (Lee, S.-J. (145) 369)

PEM fuel cell

Steam reformer; System engineering; APU technology (Beckhaus, P. (145) 639)

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PEM

Fuel cell; Spatially resolved; Current distribution; Thermography; Impedance (Hakenjos, A. (145) 307)

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PEMFC

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CHP-system; BoP; System testing (König, P. (145) 327)

PEMFC

Cold start; Statistic analysis; Impedance spectroscopy; Cyclic voltammetry; Degradation (Oszcipok, M. (145) 407)

PEMFC

Dynamic; Temperature; Water; Efficiency; Startup (Shan, Y. (145) 30)

PEMFC

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PEMFC

Modelling; Gas diffusion electrode; Heat transfer; Mass transfer; Fuel cell (Ramousse, J. (145) 416)

Performance comparison

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Proton exchange membrane (PEM) fuel cell system; Fuel cell hybrid vehicle; Ambient conditions (Haraldsson, K. (145) 298)

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Fuel cell; Numerical modeling; Flow pattern (Weng, F.-B. (145) 546)

SOFCs; Composite cathode; Impedance; Perovskites (Hwang, H.J. (145) 243)

Poly(o-phenylenediamine)

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Electrocatalytic oxidation; Small organic molecule; Platinum; Hydrogen molybdenum bronze (Wu, Y.M. (145) 286)

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Lignosulfonate; Membrane morphology; Proton conductivity; Selectivity (Zhang, X. (145) 292)

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Polymer electrolyte fuel cells

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Portable fuel cells; Hydrogen production; Fuel processor; Methanol reformer; Methanol combustor (Park, G.-G. (145) 702)

Polymer electrolyte membrane

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Polymeric fuel cells

Transport phenomena; Modelling; Gas flow mode (Serrafero, A. (145) 470)

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Direct ethanol fuel cell; CuNi alloy; Ethanol electro-oxidation; Reaction order; Charge transfer resistance (Sen Gupta, S. (145) 124)

Portable fuel cells

Polymer electrolyte membrane fuel cells; Hydrogen production; Fuel processor; Methanol reformer; Methanol combustor (Park, G.-G. (145) 702)

Portable

Air-cooling; Design parameter; PEMFC (Sohn, Y.-J. (145) 604)

Power train

PEM fuel cells; Electric vehicles; Energy management (Corbo, P. (145) 610)

Pressure distribution

Stack assembly; Assembly pressure; Gas diffusion layer; MEA; Compliance; FEM analysis (Lee, S.-J. (145) 353)

Process integration

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Proton conducting ceramics

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Proton conductivity

Direct methanol fuel cell; Layer phosphate; Dynamic mechanical analysis; Composite membrane (Bauer, F. (145) 101)

Proton conductivity

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Pt alloys

Electrooxidation; Methanol; Fuel cell; Poly(o-phenylenediamine); Cyclic voltammetry (Golikand, A.N. (145) 116)

Pt/Al₂O₃ catalyst

Fuel cell; Partial oxidation of ethanol; Hydrogen production; Pt/ZrO₂ catalyst; Pt/CeO₂ catalyst; Pt/CeO₂ catalyst; Pt/CeO₂ catalyst (Mattos, L.V. (145) 10)

 $Pt/Ce_{0.50}Zr_{0.50}O_2$ catalyst

Fuel cell; Partial oxidation of ethanol; Hydrogen production; Pt/Al₂O₃ catalyst; Pt/ZrO₂ catalyst; Pt/CeO₂ catalyst (Mattos, L.V. (145) 10)

Pt/CeO2 catalyst

Fuel cell; Partial oxidation of ethanol; Hydrogen production; Pt/Al_2O_3 catalyst; Pt/ZrO_2 catalyst; $Pt/Ce_{0.50}Zr_{0.50}O_2$ catalyst (Mattos, L.V. (145) 10)

Pt/ZrO2 catalyst

Fuel cell; Partial oxidation of ethanol; Hydrogen production; Pt/Al₂O₃ catalyst; Pt/CeO₂ catalyst; Pt/CeO₂ catalyst; Pt/CeO₂ catalyst; Pt/CeO₃ Catalyst (Mattos, L.V. (145) 10)

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Pulsed oxidation

PEM fuel cells; CO; Reliability; Efficiency (Adams, W.A. (145) 55)

Rare earth doped ceria

Self-propagating reaction; SOFC; Nanometric powders (Boskovic, S. (145) 237)

Reaction order

Direct ethanol fuel cell; CuNi alloy; Polytetrafluoroethylene; Ethanol electro-oxidation; Charge transfer resistance (Sen Gupta, S. (145) 124)

Recirculation

Steam reformer; Selective oxidation; Residential power supply; Efficiency; Anodic offgas (Heinzel, A. (145) 312)

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Solid oxide fuel cells; Anode; Oxidation; Electron microscopy (Waldbillig, D. (145) 206)

Redox-reaction

Microbial fuel cell; Energy accumulation; H₂S⁻/SO₄; Anodophiles (Ieropoulos, I. (145) 253)

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PEM fuel cells; CO; Pulsed oxidation; Efficiency (Adams, W.A. (145)

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Hydrogen production; Sponge iron; Hydrocarbon reforming; Mercury porosimetry (Kindermann, H. (145) 697)

Residential power supply

Steam reformer; Selective oxidation; Efficiency; Anodic offgas; Recirculation (Heinzel, A. (145) 312)

Secondary ion mass spectrometry (SIMS)

SOFC; Imaging; Isotope labeling; Ni/YSZ interface (Horita, T. (145) 133)

Selective oxidation

Steam reformer; Residential power supply; Efficiency; Anodic offgas; Recirculation (Heinzel, A. (145) 312)

Selectivity

Lignosulfonate; Polymer blends; Membrane morphology; Proton conductivity (Zhang, X. (145) 292)

Self-propagating reaction

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Separation hydrogen from methane

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Serial interface

Data acquisition; Fuel cell; Voltage control (Heideck, G. (145) 594) Series connection

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Carbon support; PtRu anode; DMFC; Catalyst utilisation; Anode performance (Rao, V. (145) 178)

Silver ion conductor

Solid electrolyte; Stability and iodine (Casanova, J.R. (145) 95)

Simulation

Solid oxide fuel cell; Gas concentration measurement; Concentration profile; Steam electrolysis; Mass spectrometry (Momma, A. (145) 169)

Slits

Zigzag structure; Series connection; Fuel feed (Shibasaki, M. (145) 477)

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Electrocatalytic oxidation; Platinum; Polyaniline; Hydrogen molybdenum bronze (Wu, Y.M. (145) 286)

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Hydrogen generation; Catalyst; Fuel cell; Hybrid power system (Richardson, B.S. (145) 21)

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Carbon deposition on anode; Conductivity; Anode reduction conditions; Low temperature reduction (Mallon, C. (145) 154)

SOFC

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SOFC

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SOFC

Morphology control; La(Sr)Fe(Co)O_{3-a}; Cathode (Murata, K. (145) 257)

Composite cathode; Impedance; Perovskites; Polarization (Hwang, H.J. (145) 243)

SOFC-stack

Micro-tubular; Anode-support; Extrusion (Sammes, N.M. (145) 428) Solid electrolyte

Silver ion conductor; Stability and iodine (Casanova, J.R. (145) 95) Solid oxide fuel cell

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Solid oxide fuel cell

Solid oxide fuel cells

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Spatially resolved

PEM; Fuel cell; Current distribution; Thermography; Impedance (Hakenjos, A. (145) 307)

Sponge iron

Hydrogen production; RESC; Hydrocarbon reforming; Mercury porosimetry (Kindermann, H. (145) 697)

Sputtering

Regenerative fuel cells; MEA; GDL; Titanium foam (Wittstadt, U. (145) 555)

Stability and iodine

Solid electrolyte; Silver ion conductor (Casanova, J.R. (145) 95)

Stack assembly

Assembly pressure; Gas diffusion layer; MEA; Pressure distribution; Compliance; FEM analysis (Lee, S.-J. (145) 353)

Stainless steel

Electrochemical process; Fuel cell; Surface integrity; Metallic corrosion (Lee, S.-J. (145) 362)

Startup

PEMFC; Dynamic; Temperature; Water; Efficiency (Shan, Y. (145) 30)

Statistic analysis

PEMFC; Cold start; Impedance spectroscopy; Cyclic voltammetry; Degradation (Oszcipok, M. (145) 407)

Steam electrolysis

Solid oxide fuel cell; Gas concentration measurement; Concentration profile; Simulation; Mass spectrometry (Momma, A. (145) 169)

Steam reformer

PEM fuel cell; System engineering; APU technology (Beckhaus, P. (145) 639)

Steam reformer

Selective oxidation; Residential power supply; Efficiency; Anodic offgas; Recirculation (Heinzel, A. (145) 312)

Steam reforming

Process integration; Mathematical modelling; MCFC (Heidebrecht, P. (145) 40)

Sulfonated poly(ether ether ketone)

Composite membrane; Zirconium phosphate; Polybenzimidazole; Direct methanol fuel cell; Fuel cell characterization (Silva, V.S. (145) 485)

Surface integrity

Electrochemical process; Stainless steel; Fuel cell; Metallic corrosion (Lee, S.-J. (145) 362)

Synchrotron

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System efficiency

Metal-supported IT-SOFC; CGO; Modelling; Electronic leakage current (Leah, R.T. (145) 336)

System engineering

PEM fuel cell; Steam reformer; APU technology (Beckhaus, P. (145) 639)

System testing

PEMFC; CHP-system; BoP (König, P. (145) 327)

Temperature distribution

Polymer electrolyte fuel cell; Cold start; Thermal model (Sundaresan, M. (145) 534)

Temperature

PEMFC; Dynamic; Water; Efficiency; Startup (Shan, Y. (145) 30)

Templating method

Nanoporous carbon; Direct methanol fuel cell; PtRu catalyst (Kim, P. (145) 139)

TGA

Oxygen electroreduction; Cobalt precursors; Carbon black; HRTEM; XRD (Manzoli, M. (145) 161)

Thermal insulation

Microreactor; Fuel cell; Methanol steam reforming; Thermal simulation; Anodic bonding (Terazaki, T. (145) 691)

Thermal model

Polymer electrolyte fuel cell; Cold start; Temperature distribution (Sundaresan, M. (145) 534)

Thermal simulation

Microreactor; Fuel cell; Methanol steam reforming; Thermal insulation; Anodic bonding (Terazaki, T. (145) 691)

Thermal stress

Solid oxide fuel cell; Fuel cell modelling; Transient analysis (Selimovic, A. (145) 463)

Thermography

PEM; Fuel cell; Spatially resolved; Current distribution; Impedance (Hakenjos, A. (145) 307)

Titanium foam

Regenerative fuel cells; MEA; GDL; Sputtering (Wittstadt, U. (145) 555) Transient analysis

Solid oxide fuel cell; Fuel cell modelling; Thermal stress (Selimovic, A. (145) 463)

Transient response

MCFC; Current-interrupted method; Current-pulse method; Degradation factor (Sugiura, K. (145) 515)

Transport phenomena

Modelling; Polymeric fuel cells; Gas flow mode (Serrafero, A. (145) 470) Tungsten oxide

Nanocomposite oxide-based catalyst; Methanol; Cerium oxide; Yttria-stabilized zirconia (Natile, M.M. (145) 644)

Tungsten oxide

Photocatalysis; Bismuth oxide; Hydrogen production (Finlayson, A.P. (145) 667)

Vapour-phase pollution

DIR-MCFC; Volatilizing molten hydroxide; Image measurement technique (Sugiura, K. (145) 199)

Visualization technique

PEFC; Water management; Cathode gas channel (Sugiura, K. (145) 526)

Volatilizing molten hydroxide

DIR-MCFC; Vapour-phase pollution; Image measurement technique (Sugiura, K. (145) 199)

Voltage control

Data acquisition; Fuel cell; Serial interface (Heideck, G. (145) 594)

Water management

PEFC; Cathode gas channel; Visualization technique (Sugiura, K. (145) 526)

Water management

Polymer electrolyte fuel cells; Local current measurements; Humidification (Büchi, F.N. (145) 62)

Water

PEMFC; Dynamic; Temperature; Efficiency; Startup (Shan, Y. (145) 30)

WGS

Cobalt catalyst; Methanation; Carbon monoxide; PEMFC; Ethanol reforming (Batista, M.S. (145) 50)

XRD

Oxygen electroreduction; Cobalt precursors; Carbon black; TGA; HRTEM (Manzoli, M. (145) 161)

Yttria-stabilized zirconia

Nanocomposite oxide-based catalyst; Methanol; Tungsten oxide; Cerium oxide (Natile, M.M. (145) 644)

Zigzag structure

Series connection; Fuel feed; Slits (Shibasaki, M. (145) 477)

Zirconium phosphate

Sulfonated poly(ether ether ketone); Composite membrane; Polybenzimidazole; Direct methanol fuel cell; Fuel cell characterization (Silva, V.S. (145) 485)

ZSM-5-supported Ni-Ce catalyst

Bimetallic Ni-Re catalyst; Alloying of Ni with Re; Oxidative steam reforming of gasoline; On-board hydrogen production (Wang, L. (145) 707)